only the head, expressed in millimeters of water, corresponding to the friction loss per second of air at 0° *and* 760 *mm passing through a brick-lined flue with a velocity of 1 m per second, the sectional area*

of the flue corresponding to the equation -~= 1.293.

According to the computations of the author, 0.016 may be taken as the value of the coefficient *m* with sufficient precision for the computations met with in metallurgy. The verification of this coefficient was made by using it in computations upon Cowper and Massick and Crook hot-blast stoves.

The formula (A) may be used for all cases in which a current of gases is flowing through mains or flues.

1. If the current of flowing gas is subdivided into a

in which

$$S = \frac{\sum}{n}$$

and

$$\sum = \text{«.=-;}$$

n being the number of secondary channels or flues.

2. If the cross-sectional areas of these secondary channels or flues are not equal (as, for example, in the gas and air flues of an open-hearth furnace), the values $B=SL$ and co in the formula *(A),* for the parts located between the point where the gaseous currents separate and the point where the secondary flues join comprise, respectively, the entire surface touched by the gases in passing and the sum of the average areas of all the channels or flues through which the gases pass.

3. If the gas in motion does not fill the furnace to its full height, the depth of the gaseous stream is